

What is claimed is:

1. An electrochemical gas generator, comprising:
a substrate;
a first electrode deposited on said substrate for providing an electrical connection with a conducting medium;
5 a second electrode deposited on said substrate for generating a gas;
said first electrode having a plurality of members extending from at least one side;
said second electrode having a plurality of extensions extending from at least one side; and
10 said plurality of members are placed alternately with said plurality of extensions.
2. The electrochemical gas generator according to claim 1, further including an electrolytic material in contact with said first and second electrodes for providing an electrical connection.
3. The electrochemical gas generator according to claim 2, wherein said electrolytic material is in a solid state.
4. The electrochemical gas generator according to claim 3, wherein said electrolytic material is Nafion.
5. The electrochemical gas generator according to claim 3, further including a reservoir for containing a solution to wet said electrolytic material.

10029623-10204
F03207-82652007

6. The electrochemical gas generator according to claim 2, further including a coating deposited on said electrolytic material for regulating an amount of gas generated.
7. The electrochemical gas generator according to claim 6, wherein said coating is a hydrophobic material.
8. The electrochemical gas generator according to claim 6, wherein said coating is porous.
9. The electrochemical gas generator according to claim 3, wherein said electrolytic material is porous.
10. The electrochemical gas generator according to claim 1, further including an inlet for introducing a vapor and an outlet for extracting a gaseous concentration.
11. The electrochemical gas generator according to claim 1, wherein said plurality of members are placed on top of said plurality of extensions in a generally vertical orientation.
12. The electrochemical gas generator according to claim 1, wherein said plurality of members and plurality of extensions are in a generally circular orientation.
13. An electrochemical gas generator, comprising:
 - a substrate;
 - a first electrode deposited on said substrate for providing an electrical connection with a conducting medium;

5 a second electrode deposited on said substrate for generating a gas;
 said first electrode having a plurality of members extending from at least
one side;

 said second electrode having a plurality of extensions extending from at
least one side;

10 said plurality of members are placed alternately with said plurality of
extensions; and

 a coating deposited on a surface of an electrolytic material for regulating
an amount of gas generated.

14. The electrochemical gas generator according to claim 13, wherein said
coating is a hydrophobic material.

15. The electrochemical gas generator according to claim 13, wherein said
coating is Teflon.

16. The electrochemical gas generator according to claim 13, wherein said
coating is porous.

17. The electrochemical gas generator according to claim 13, further including
an inlet for introducing a vapor and an outlet for extracting a gaseous
concentration.

18. The electrochemical gas generator according to claim 13, wherein said
first and said second electrodes are interdigitated.

19. The electrochemical gas generator according to claim 18, wherein said
plurality of members are spaced apart from said plurality of extensions.

100296228 102201

20. The electrochemical gas generator according to claim 13, wherein said electrolyte is in a solid state.

21. The electrochemical gas generator according to claim 13, further including a reservoir for containing a solution to wet said electrolytic material.

22. The electrochemical gas generator according to claim 13, wherein said electrolytic material is Nafion.

23. An electrochemical gas generator, comprising:
a substrate;
a first electrode deposited on said substrate for providing an electrical connection with a conducting medium;
5 a second electrode deposited on said substrate for generating a gas;
an electrolytic material in contact with said first electrode and said second electrode; and
a coating deposited on a surface of said electrolyte for regulating an amount of gas generated.

24. The electrochemical gas generator according to claim 23, wherein said first and said second electrodes are interdigitated.

25. The electrochemical gas generator according to claim 23, wherein said electrolytic material is in a solid state.

26. The electrochemical gas generator according to claim 25, wherein said electrolytic material is Nafion.

10029623.10201

27. The electrochemical gas generator according to claim 25, further including a reservoir for containing a solution to wet said electrolytic material.

28. The electrochemical gas generator according to claim 23, wherein said coating is a hydrophobic material.

29. The electrochemical gas generator according to claim 23, wherein said coating is Teflon.

30. The electrochemical gas generator according to claim 23, wherein said coating is porous.

31. The electrochemical gas generator according to claim 25, wherein said electrolytic material is porous.

32. The electrochemical gas generator according to claim 23, further including an inlet for introducing a vapor and an outlet for extracting a gaseous concentration.

33. A method for providing an electrochemical gas generator, comprising:
providing a substrate;
depositing a first electrode on said substrate for providing an electrical connection with a conducting medium;

5 extending a plurality of members from said at least one side of said first electrode;

depositing a second electrode on said substrate for generating a gas;
extending a plurality of extensions from said at least one side of said second electrode; and

10 alternating said plurality of members with said plurality of extensions.

100291523-10001

34. The method according to claim 33, further comprising the step of contacting said first electrode with said second electrode using an electrolytic material.

35. The method according to claim 34, further comprising the step of coating said electrolytic material for regulating a gas generated.

36. A method for providing an electrochemical gas generator, comprising:
providing a substrate;

depositing a first electrode on said substrate for providing an electrical connection with a conducting medium;

5 depositing a second electrode on said substrate for generating a gas;

contacting said first electrode with said second electrode using an electrolytic material; and

coating a surface of said electrolytic material for regulating a gas generated.

37. The method according to claim 33, further comprising the step of interdigitating said first and said second electrodes.

38. The method according to claim 33, further comprising the step of wetting said electrolytic material with a solution for facilitating a flow of ions to said first and said second electrodes.

39. The method according to claim 33, further comprising the step of introducing a vapor into the electrochemical gas generator.

10029628.102201

40. The method according to claim 33, further comprising the step of extracting a gaseous concentration from the electrochemical gas generator.

10029628 "102201